

SAFETY SWITCH FOR A WATER DISPENSER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a safety switch, and more particularly to safety switch for a water dispenser so that an accidental touch of the safety switch will not cause water to flow out of the water dispenser, thus avoiding spillage, potential injury to users etc.

2. Description of Related Art

A conventional water dispenser usually is equipped with a distilled water flagon and a water dispensing mechanism having a switch to control water flow out of the distilled water flagon. By pressing the switch, the distilled water is able to flow out of the distilled water flagon and thus the user is able to enjoy the distilled water. However, when the switch is accidentally touched, such as someone brushing past the dispenser, heated water flowing out of the water dispenser may cause a nuisance or even injury to the people, especially children, nearby the water dispenser. Therefore, to avoid such an unpleasant incident from happening, patents providing safety measurements have been introduced to the market and they do have the ability to prevent such mishap from happening. However, due to the structural complexity and excessive time consumed in assembly, cost of such safety switches is never low.

To overcome the shortcomings, the present invention tends to provide an improved safety switch to mitigate the aforementioned problems.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide an improved

1 safety switch which is simple in structure and easy to be assembled.

2 To accomplish the foregoing objective, the safety switch of the present
3 invention is provided with a sliding block movably received between the handle
4 and support so that when the sliding block is sandwiched between the handle and
5 the support, the handle will not be able to be pivoted to allow the water to flow
6 out of the dispenser and when the sliding block is away from engagement with
7 the support, the handle is able to be pivoted to allow water to flow out of the
8 water dispenser.

9 Other objects, advantages and novel features of the invention will
10 become more apparent from the following detailed description when taken in
11 conjunction with the accompanying drawings.

12 BRIEF DESCRIPTION OF THE DRAWINGS

13 Fig. 1 is a perspective view of the safety switch of the present invention;

14 Fig. 2 is an exploded perspective view showing structural relationship
15 between the handle and the sliding block;

16 Fig. 3 is a cross sectional view taken by line 3-3 of Fig. 1;

17 Fig. 4 is an operational schematic view showing the sliding block is
18 moved relative to the handle; and

19 Fig. 5 is an operational schematic view showing that the handle is able to
20 be pivoted as a consequence of the movement of the sliding block.

21 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

22 With reference to Fig. 1, a safety switch in accordance with the present
23 invention is adapted to combine with a water dispenser (not shown) with a water
24 dispensing tube (50). The water dispensing tube (50) has an inlet (51) for

1 receiving water from the water dispenser and an outlet (52) for allowing the
2 water from the inlet (51) to flow out of the water dispensing tube (50).

3 With reference to Figs. 2 and 3, it is noted that the safety switch of the
4 present invention has a handle (10), a sliding block (20), a support (30)
5 sandwiching the sliding block (20) with the handle (10), a cap (40) mounted on a
6 periphery defining a channel (53) in the water dispensing tube (50) and a sealing
7 ring (60) received in the channel (53) to alternatively block communication
8 between the inlet (51) and the outlet (52).

9 The handle (10) has a recessed area (11) in a mediate portion of the
10 handle (10), a first protrusion (12) formed on a side face defining the recessed
11 area (11) and two wings (13) extending from a distal end of the handle (10). A
12 stop (14) is formed on a top face of the handle (10). The sliding block (20) is
13 partially and slidably received in the recessed area (11) and has a head (21)
14 formed on a first distal end of the sliding block (20) and on top of the handle (10),
15 a second protrusion (22) formed on a side face of a bottom face of the sliding
16 block (20) to correspond to the first protrusion (11) of the handle (10), a cutout
17 (23) defined in the bottom face of the sliding block (20) and a bent (24) formed
18 on a second distal end of the sliding block (20). A first spring (A) is abutted
19 between the first protrusion (12) and the second protrusion (22).

20 The support (30) is securely mounted on top of the periphery defining
21 the channel (53) and has a receiving space (31) defined to correspond to and
22 receive therein the bent (24) of the sliding block (20). The cap (40) is threadingly
23 mounted outside the water dispensing tube (50) to secure engagement between
24 the support (30) and the water dispensing tube (50). The sealing ring (60) is

1 received in the channel (53) of the water dispensing tube (50) to alternatively
2 block the communication between the inlet (51) and the outlet (52). A guiding
3 rod (70) with a second spring (B) mounted therearound is received in the sealing
4 ring (60) and securely connected to the wings (13) of the handle (10).

5 With reference to Figs. 4 and 5, after the safety switch of the water
6 dispenser is assembled, the sliding block (20) is able to be moved relative to the
7 handle (10) by pushing the head (21), the bent (24) leaves the restriction of the
8 receiving space (31) of the support (30) and simultaneously the first spring (A) is
9 compressed between the first protrusion (12) and second protrusion (22).
10 Because the bent (24) leaves the limitation of the receiving space (31) of the
11 support (30), the handle (10) together with the sliding block (20) is able to be
12 pivoted and thus the communication between the inlet (51) and the outlet (52) is
13 resumed due to the pivotal movement of the handle (10) and the upward
14 movement of the guiding rod (70).

15 Therefore, it can be summed up that only after the sliding block (20) is
16 moved relative to the handle (10) and the limitation to the bent (24) of the sliding
17 block (20) by the support (30) is released can the handle (10) be pivoted to
18 resume the communication between the inlet (51) and the outlet (52). Accidental
19 touch of the handle (10) whereby unintended water flow from the water
20 dispenser is avoided and thus the user of the water dispenser is protected from
21 soaking and scalding by heated water.

22 It is to be understood, however, that even though numerous
23 characteristics and advantages of the present invention have been set forth in the
24 foregoing description, together with details of the structure and function of the

- 1 invention, the disclosure is illustrative only, and changes may be made in detail,
- 2 especially in matters of shape, size, and arrangement of parts within the
- 3 principles of the invention to the full extent indicated by the broad general
- 4 meaning of the terms in which the appended claims are expressed.